

WHAT IS CLAIMED IS:

1. A device upon which a flexible substrate is placed in order to be printed upon, the device being configured so as to create contact force between a supporting surface of the device and the flexible substrate, the device comprising:

- (a) a support structure configured so as to render said flexible substrate as a plurality of adjacent flat regions, said flat regions being sequential along a feed path of said flexible substrate, each of said flat regions being positioned so that a vector following said feed path changes direction between said adjacent flat region in said sequence, said change of direction being a rotation about an axis that is perpendicular to said feed path and parallel to the surface of said flexible substrate, so that an entire surface of said plurality of flat regions, in combination, has a substantially convex profile; and
- (b) a tensioning device configured so as to produce tension in said flexible substrate, said tension being along said feed path.

2. A device of claim 1, further comprising a digital printing device including a plurality of print heads, said support structure being configured so as to provide one said flat region for each of said printing heads.

3. A device of claim 2, wherein said printing device is a digital four color process printer using four said print heads and said support structure includes at least four said flat regions.

4. A device of claim 1, wherein said support structure includes parallel support bars positioned transversely to said feed path, said support bars at least partially delineating sides of said rectangles.

5. A device of claim 3, wherein said flat regions are created when said flexible substrate is placed upon said support structure, said flat regions being those portions of said flexible substrate that are stretched between said support bars.

6. A device of claim 1, wherein said support structure is a substantially continuous solid surface fabricated with a plurality of said flat regions.

7. A device of claim 1, wherein said tensioning device is integral to a feed and take-up device which moves said flexible substrate across said support structure.

8. A device for applying print media to a flexible substrate, the device comprising:

- (a) a support structure configured so as to have a substantially convex profile onto which said flexible substrate is placed;

- (b) a tensioning device configured so as to produce tension in said flexible substrate, said tension being along a feed path; and
- (c) a plurality of print heads deployed so as to align each of said plurality of print heads with a corresponding printing region on said flexible substrate, said print heads defining a printing plane, said printing planes being rotated in relation to one another, said printing plane including said corresponding printing region.

9. The device of claim 8, wherein said support structure is configured so as to render said flexible substrate as a plurality of adjacent flat regions, said printing plane being coincidental with said flat region.

10. The device of claim 8, wherein said support structure is configured so as to render said flexible substrate as a substantially continuous curve, said printing plane being tangential to said curve.